Validation Metrics - Update
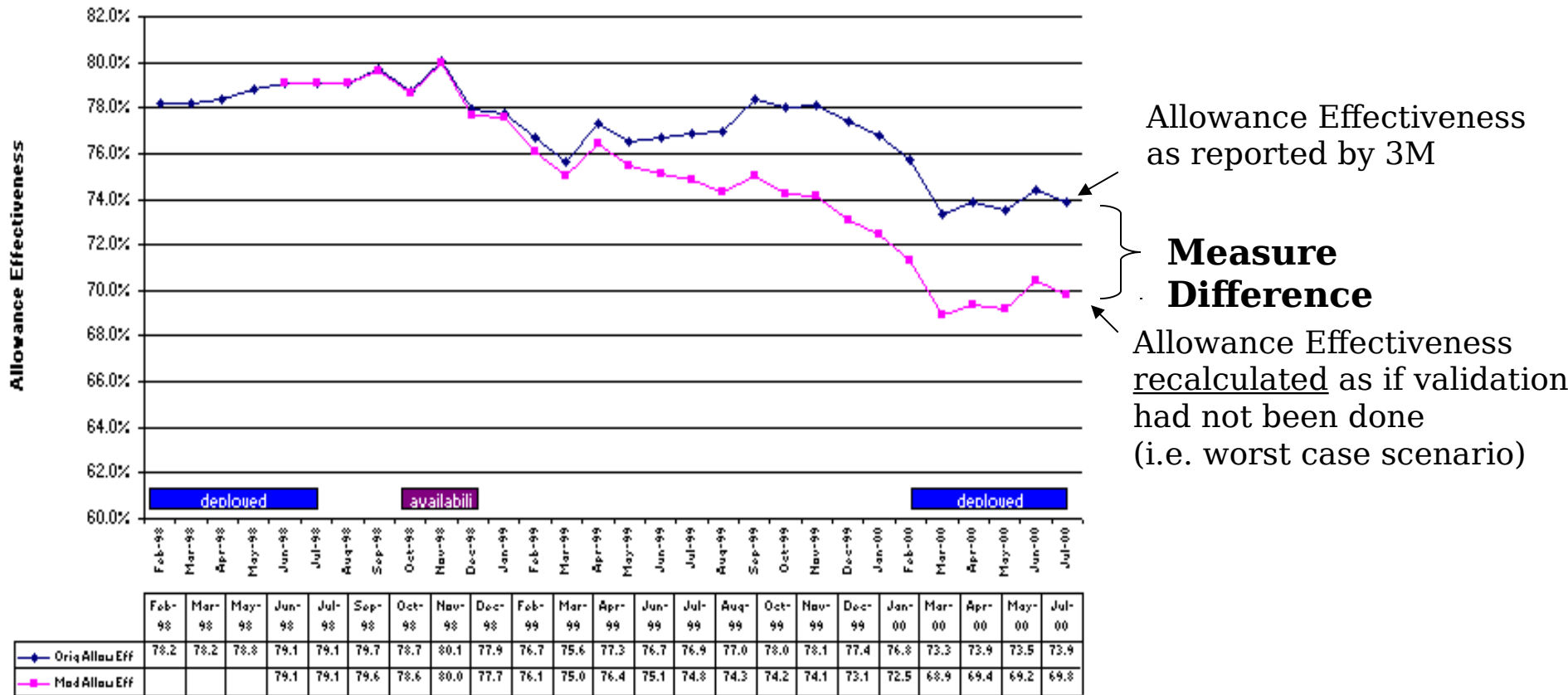## CDM/ISEA Validation Working Group
Apr 2002

Kirsten Snell
NSLC, N51
snellkr@navsea.navy.mil
717-605-6176

Workfile Status

- **Workfiles received; 24 month analysis complete**
  - USS Normandy (CG 60)
  - USS Anzio (CG 68)
  - USS Port Royal (CG 73)
  - USS Hewitt (DD 966)
  - USS Laboon (DDG 58)
  - USS Russell (DDG 59)
  - USS Boone (FFG 28)
  - USS Austin (LPD 4)
  - USS Duluth (LPD 6)
- **Workfiles received: ongoing 3M analysis:**
  - USS Caron (DD 970) – completed 18 month analysis
  - USS Milius (DDG 69)-completed 18 month analysis
- **Workfiles requested:**
  - USS Tarawa (LHA 1) – NNSY – funding?
  - USS Saipan (LHA 2) – NNSY – funding?
  - USS Ashland (LSD 48) - Boston - workfile parameters forwarded 7/01
- **Workfiles not available:**
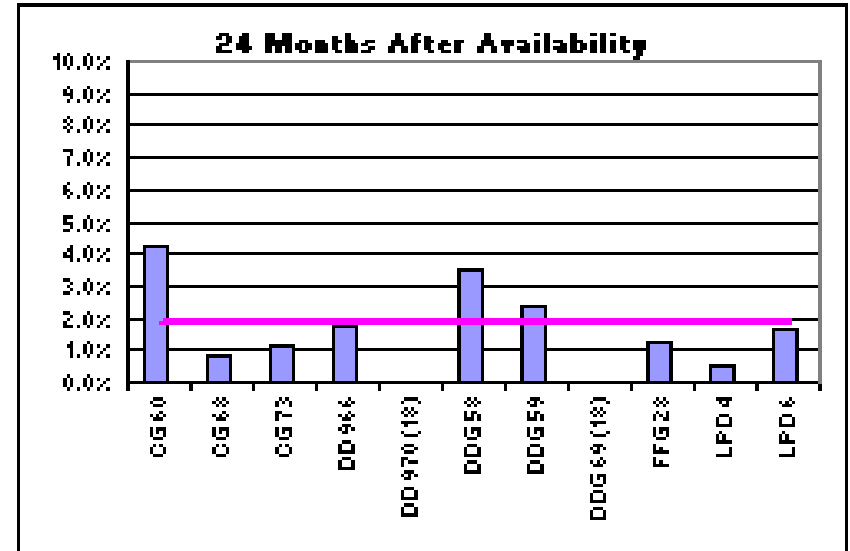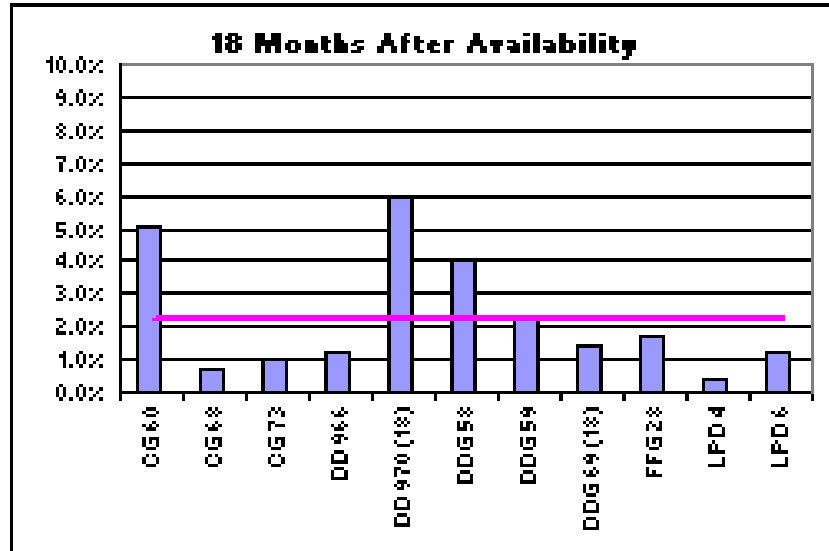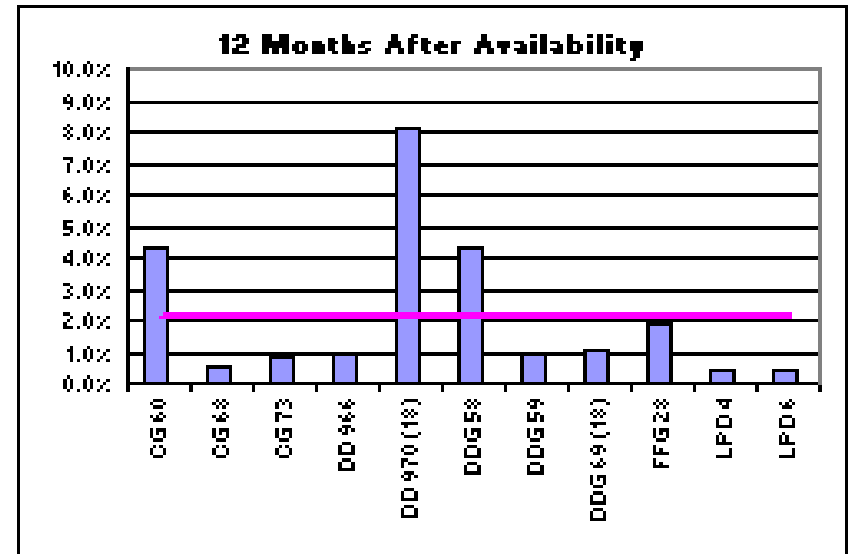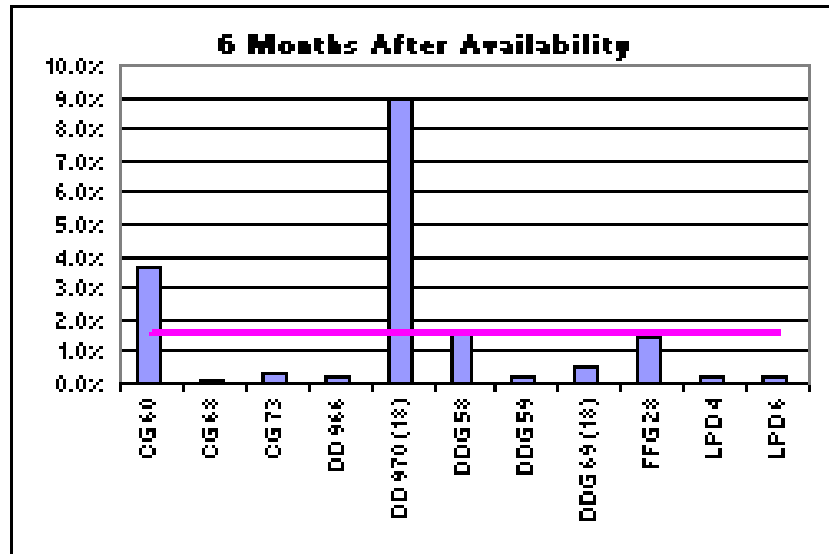 - USS Dallas (SSN 700)

Metric: Allowance Effectiveness

USS Laboon (DDG 58)
Monthly Allowance Effectiveness

Allowance Effectiveness as reported by 3M

Measure Difference

Allowance Effectiveness <u>recalculated</u> as if validation had not been done (i.e. worst case scenario)

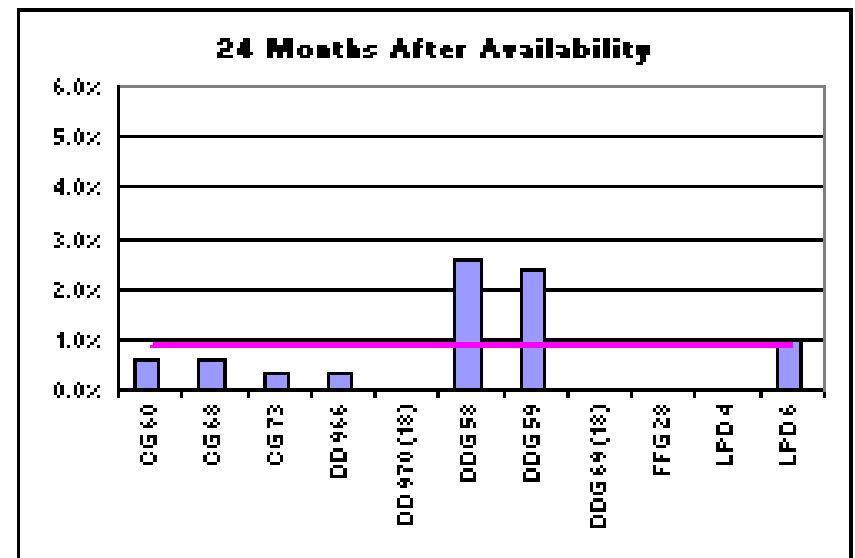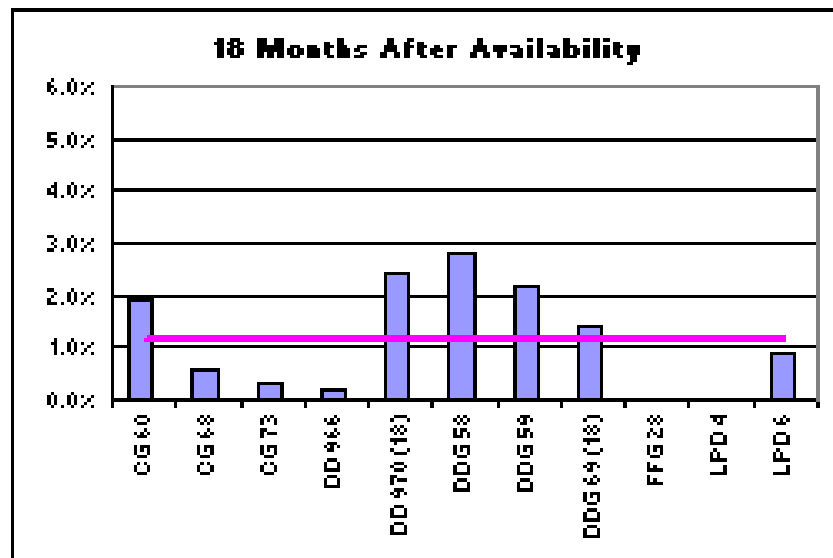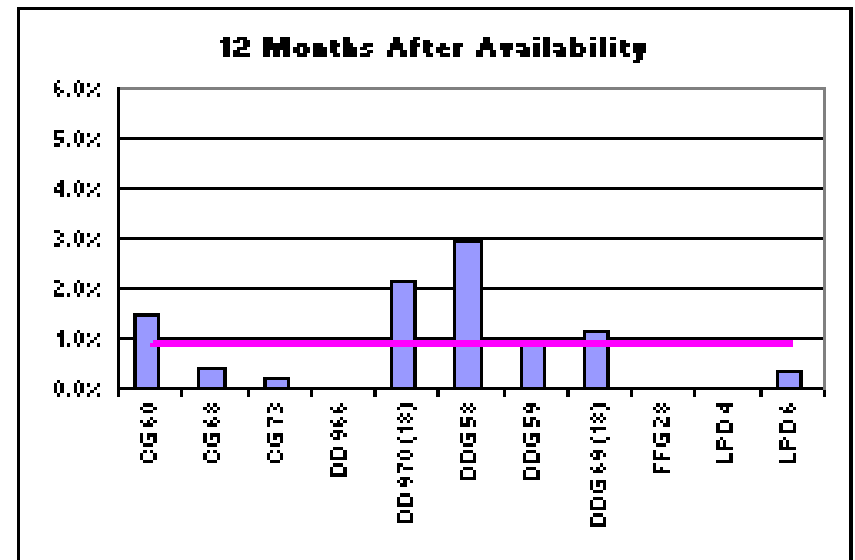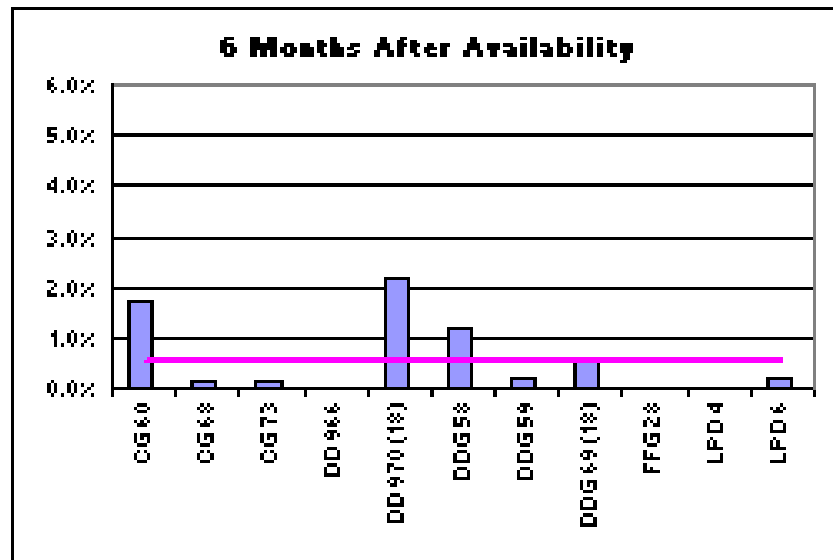|	Feb-98	Mar-98	May-98	Jun-98	Jul-98	Sep-98	Oct-98	Nov-98	Dec-98	Feb-99	Mar-99	Apr-99	Jun-99	Jul-99	Aug-99	Oct-99	Nov-99	Dec-99	Jan-00	Mar-00	Apr-00	May-00	Jul-00
Orig Allow Eff	78.2	78.2	78.8	79.1	79.1	79.7	78.7	80.1	77.9	76.7	75.6	77.3	76.7	76.9	77.0	78.0	78.1	77.4	76.8	73.3	73.9	73.5	73.9
Mod Allow Eff				79.1	79.1	79.6	78.6	80.0	77.7	76.1	75.0	76.4	75.1	74.8	74.3	74.2	74.1	73.1	72.5	68.9	69.4	69.2	69.8

• More than 30% of all maintenance on-board a ship is being deferred due to "lack of parts" – why didn't the ship have the part?

• Allowance Effectiveness measures the % of parts that were issued for maintenance that had an allowance in the ship's SRF in SNAP.

• Configuration accuracy is a key driving factor in maintaining correct allowances on board ship.

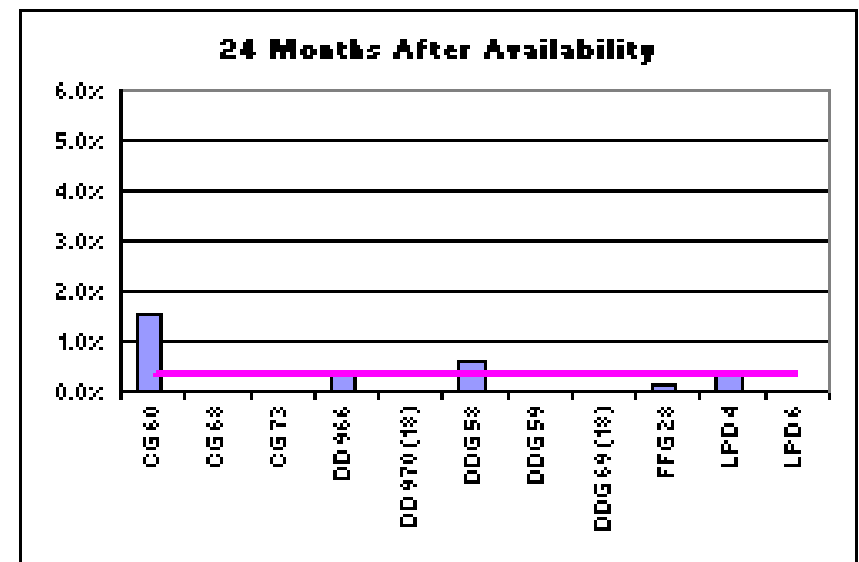# Improvement in Allowance Effectiveness due to All Validation Efforts - Over Time
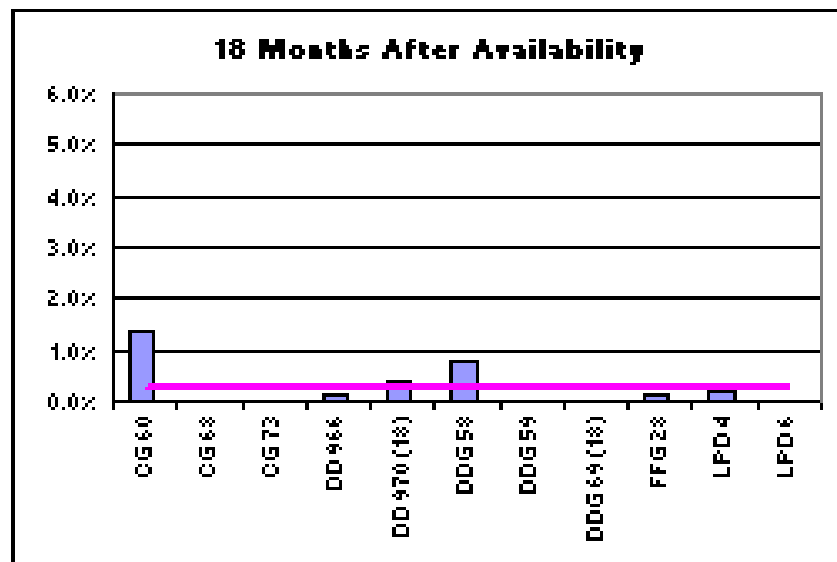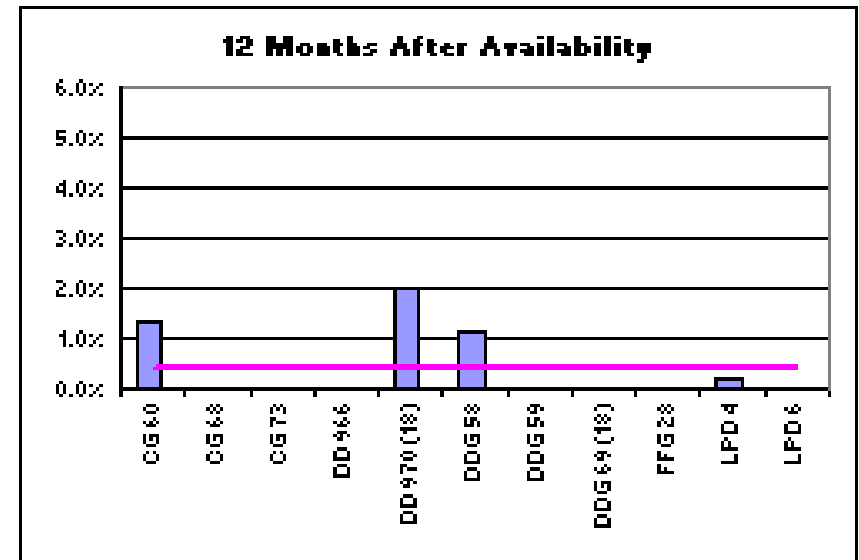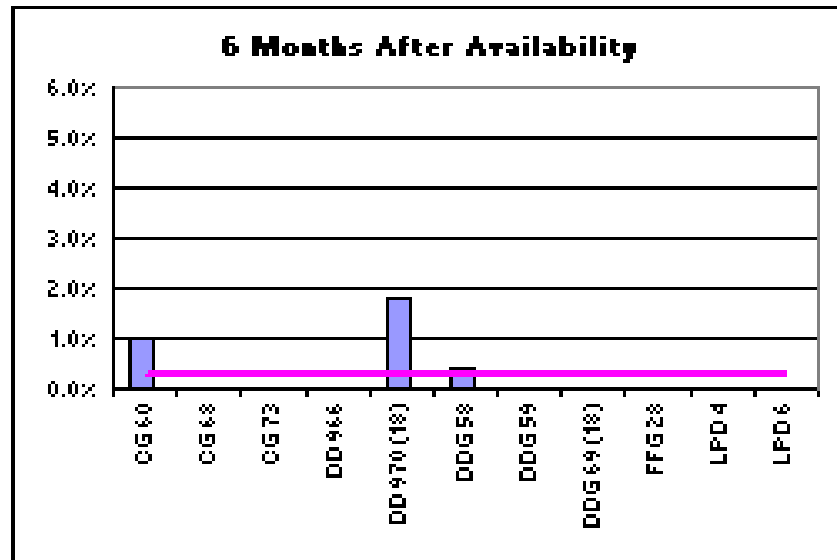

- **18 month average: potential 2.3% increase in Allowance Effectiveness**

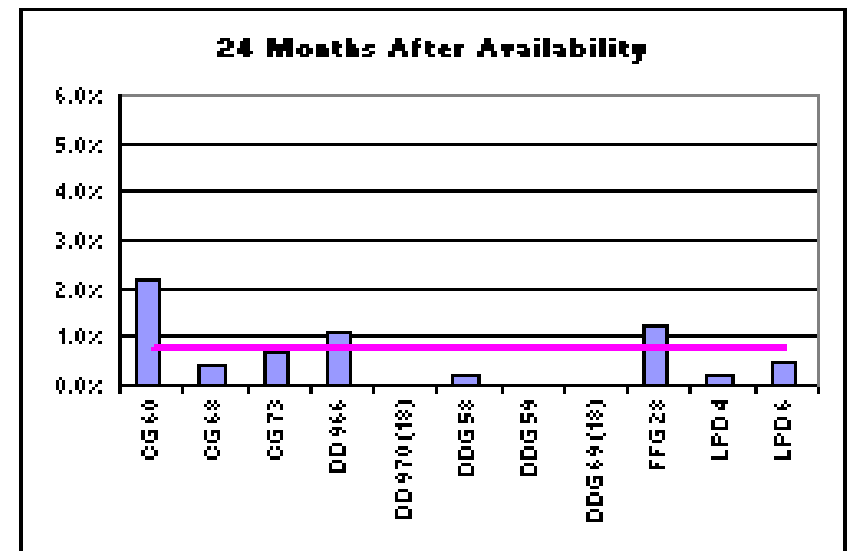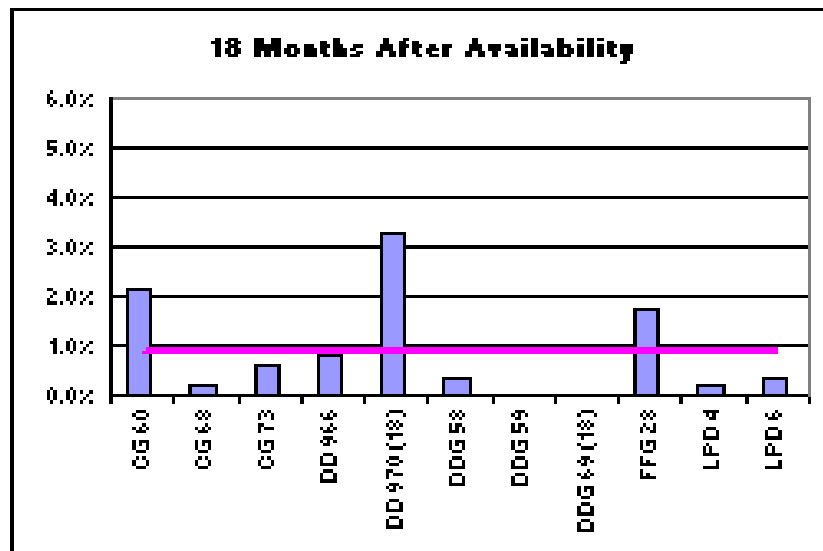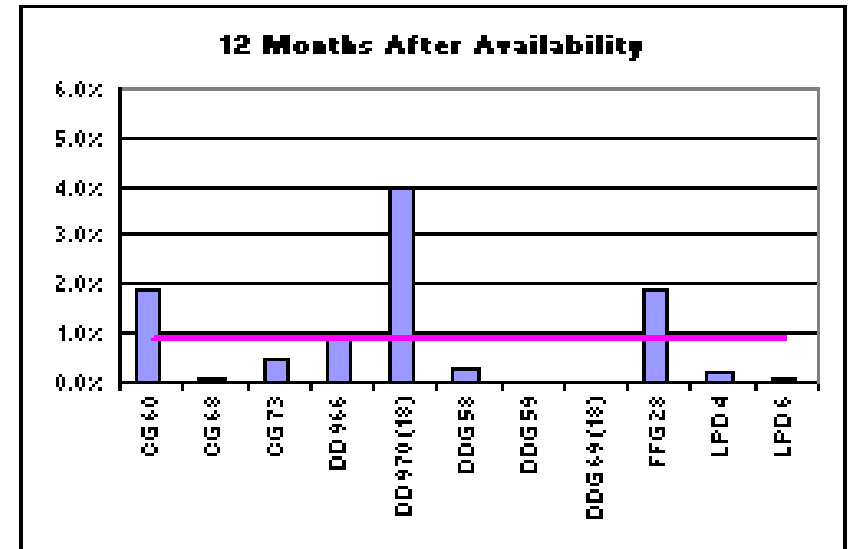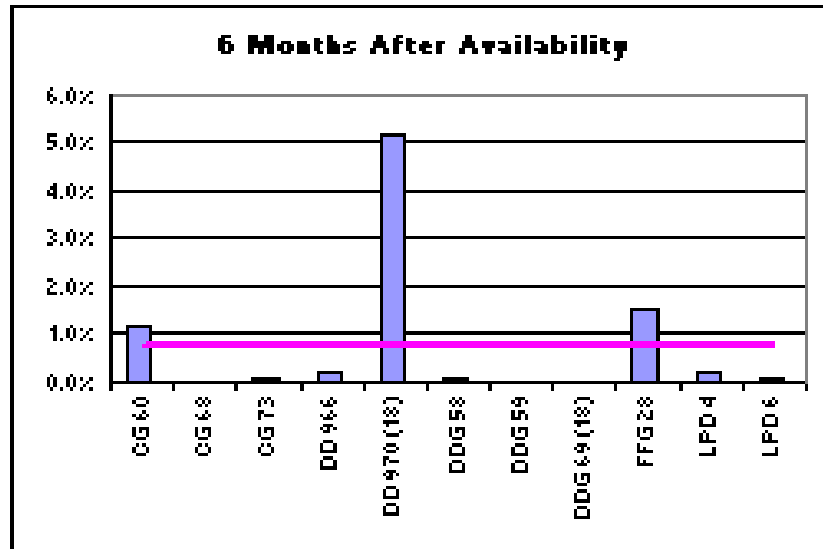# Improvement in Allowance Effectiveness due to Installation Validation Efforts - Over Time

- **18 month average: potential 1.2% increase in Allowance Effectiveness**

Improvement in Allowance Effectiveness due to Operational Validation Efforts - Over Time

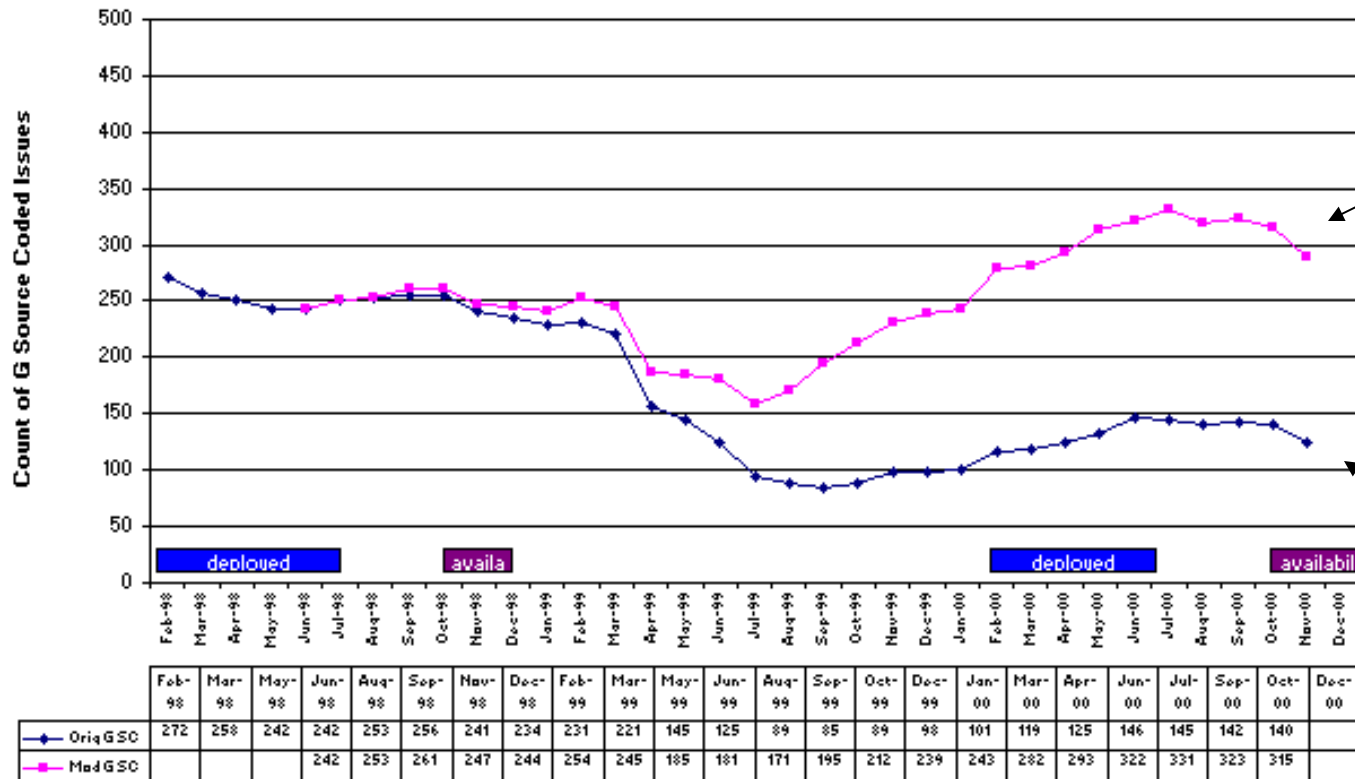- **18 month average: potential 0.3% increase in Allowance Effectiveness**

Improvement in Allowance Effectiveness due to Maintenance Validation Efforts - Over Time

- **18 month average: potential 0.9% increase in**
  Allowance Effectiveness

Metric: Count of 'G' Source Coded Issues

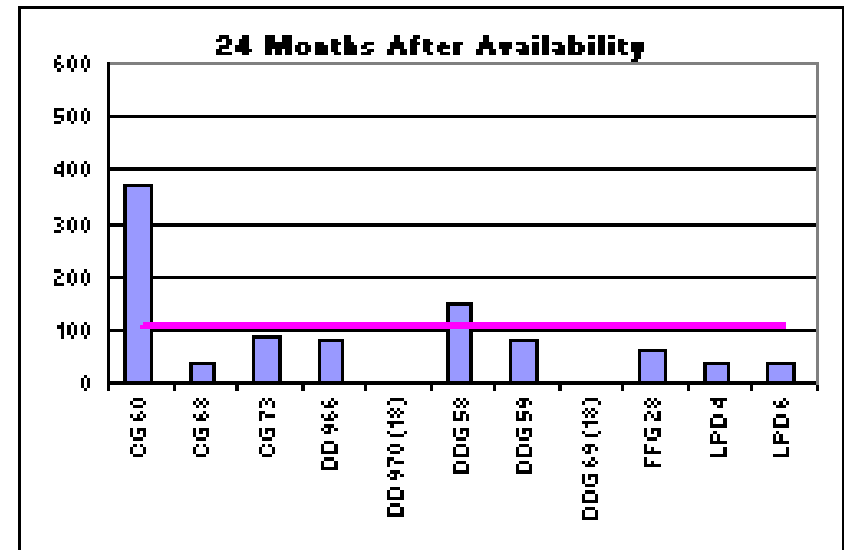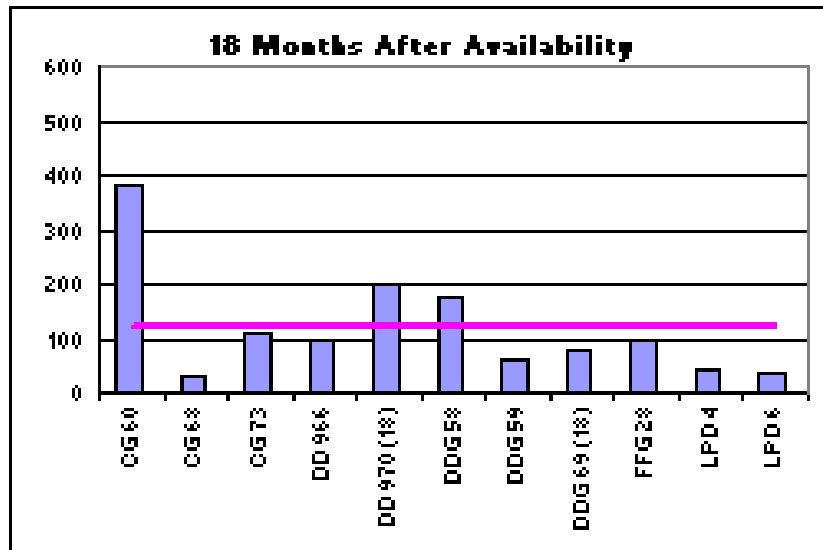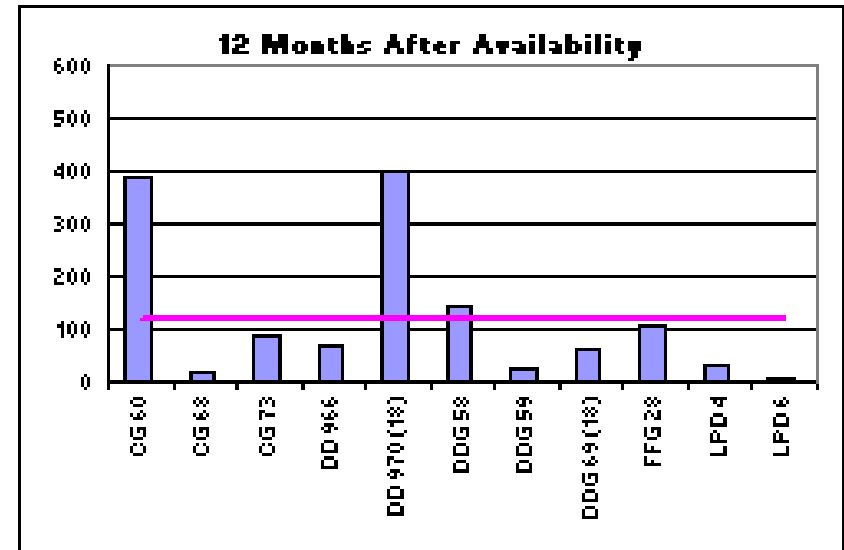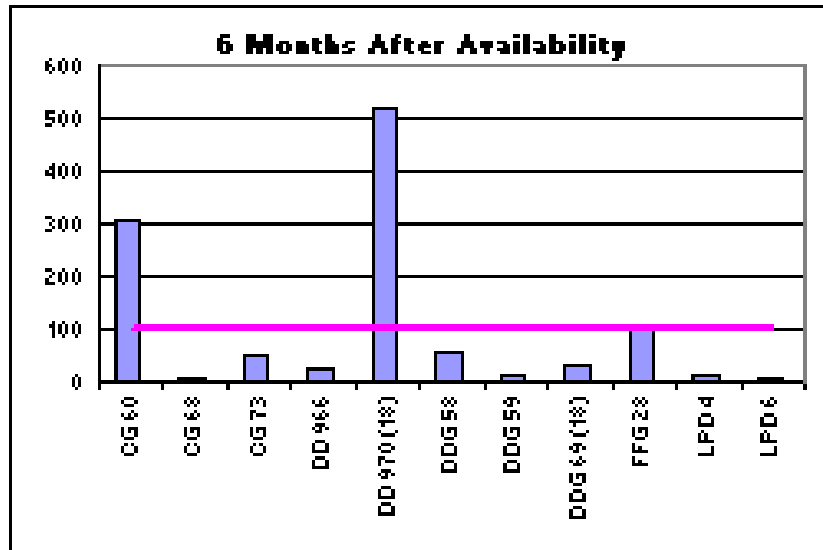**USS Laboon (DDG 58)**
G Source Coded Issues

Count of 'G' source coded issues recalculated as if validations had not happened (i..e. worst case scenario)

Measure differen

Count of 'G' source coded issues as reported by 3M

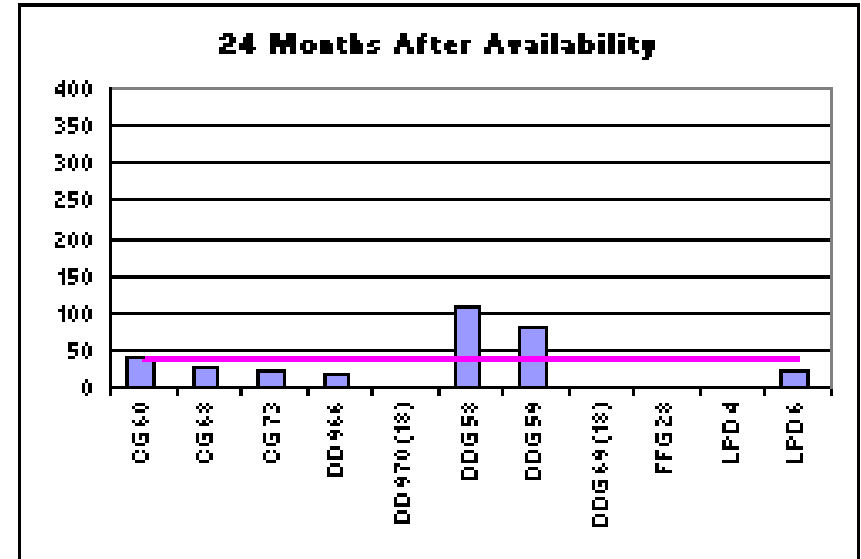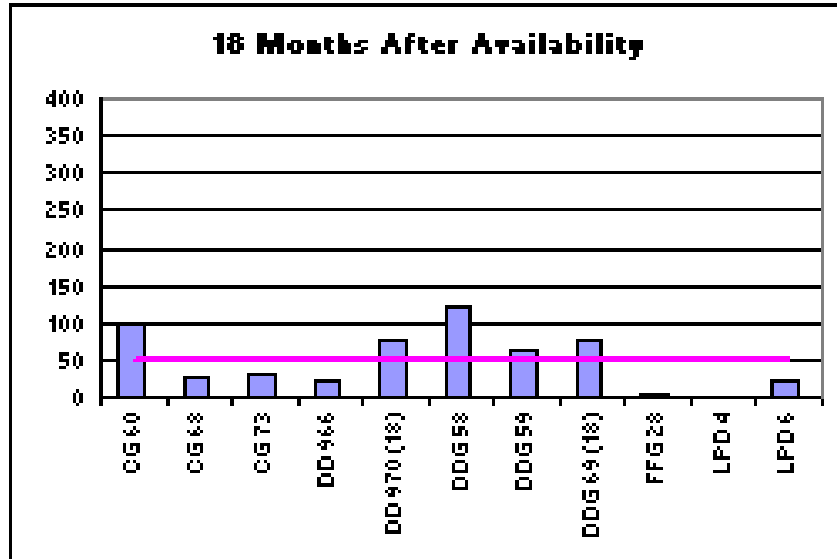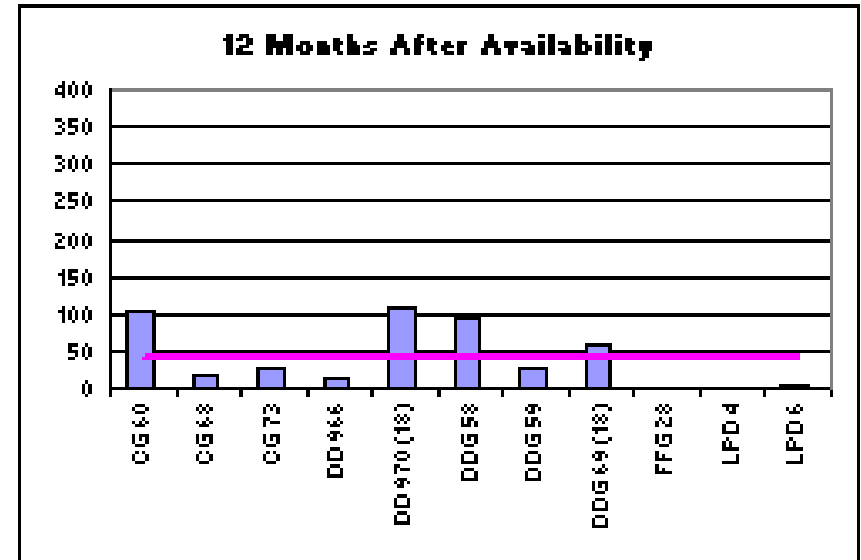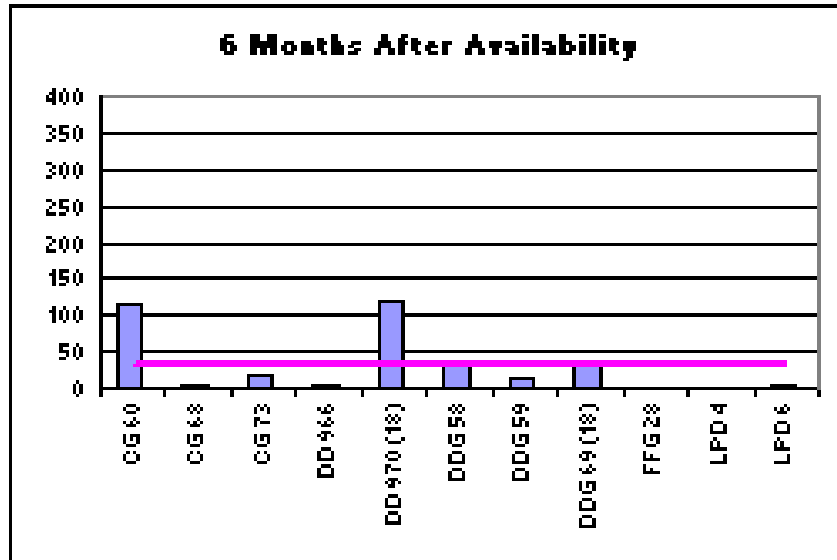|	Feb-98	Mar-98	May-98	Jun-98	Aug-98	Sep-98	Nov-98	Dec-98	Feb-99	Mar-99	May-99	Jun-99	Aug-99	Sep-99	Oct-99	Dec-99	Jan-00	Mar-00	Apr-00	Jun-00	Jul-00	Sep-00	Oct-00	Dec-00
Orig GSC	272	258	242	242	253	256	241	234	231	221	145	125	89	85	89	98	101	119	125	146	145	142	140	
Mod GSC				242	253	261	247	244	254	245	185	181	171	195	212	239	243	282	293	322	331	323	315	

- Definition of a 'G' source code: 'Not Carried' repair part issued for maintenance which is not listed on an APL in the ship's COS file in SNAP.

- Causes for a 'G' source coded issues are configuration inaccuracies and/or provisioning problems

Potential G Source Coded Issues Avoided due to All Validation Efforts - Over Time

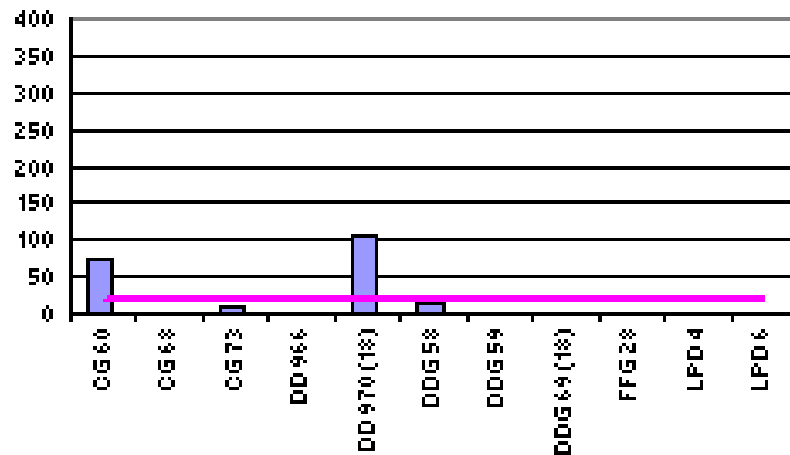- **18 month average: potential 119 'G' source coded issues avoided**

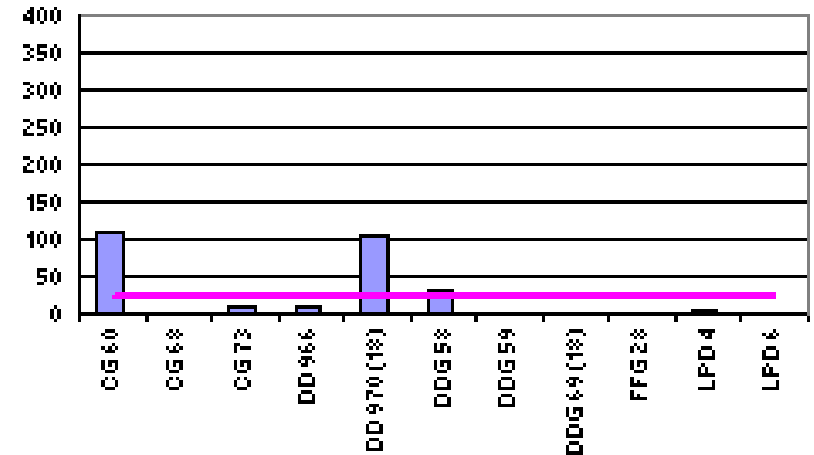# Potential G Source Coded Issues Avoided due to Installation Validation Efforts - Over Time

6 Months After Availability

12 Months After Availability

18 Months After Availability

24 Months After Availability

- **18 month average: potential 50 'G' source coded issues avoided**

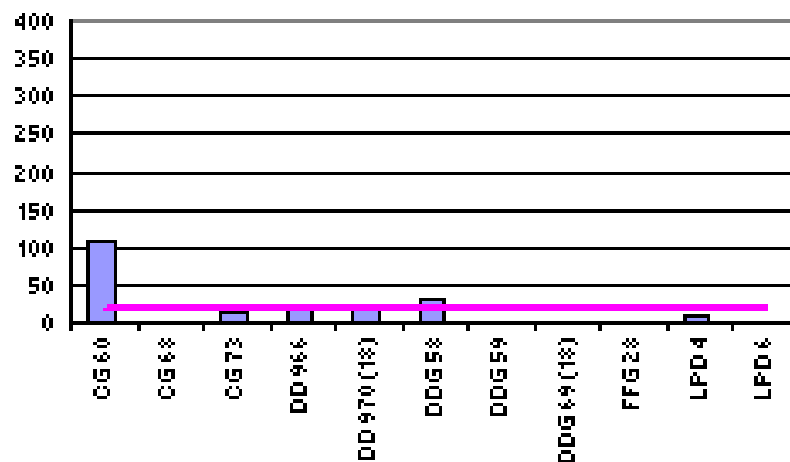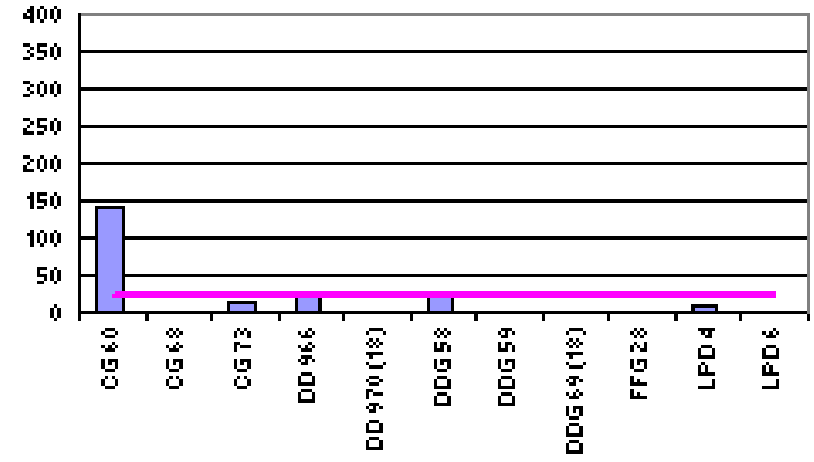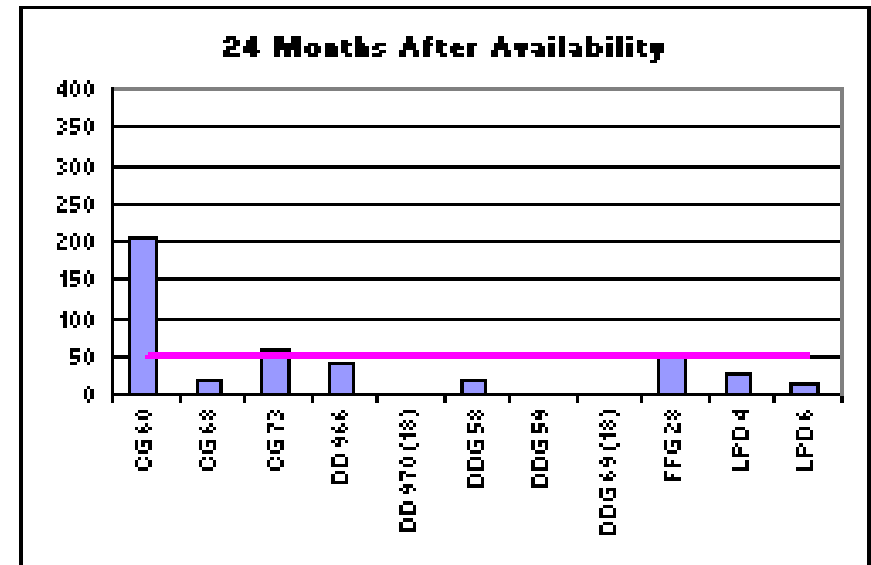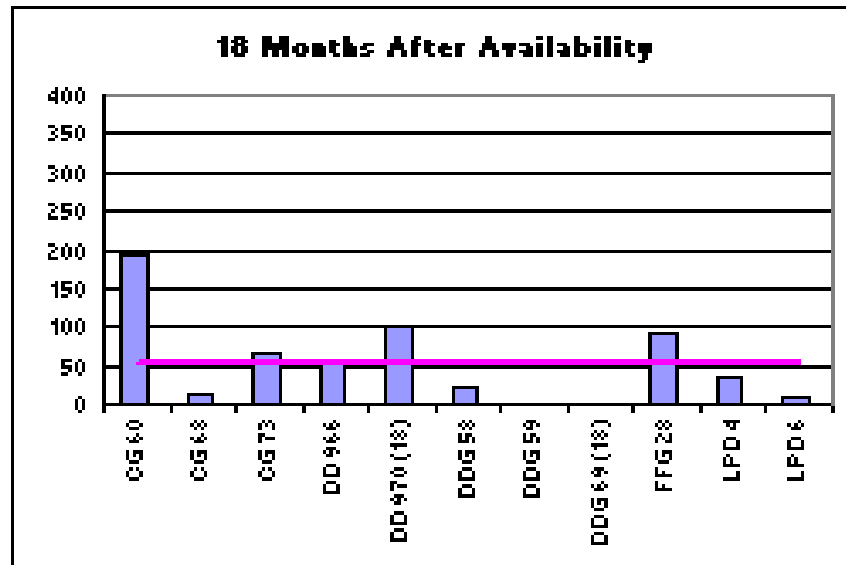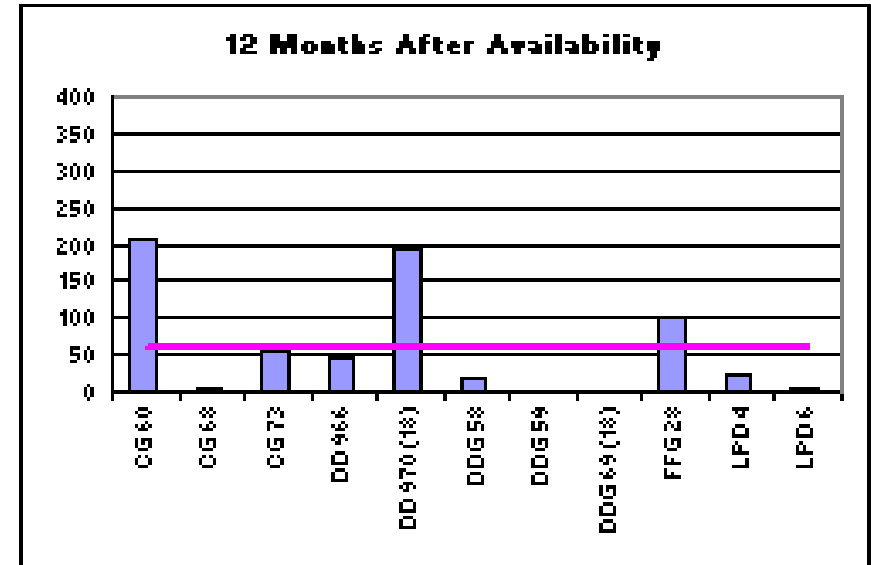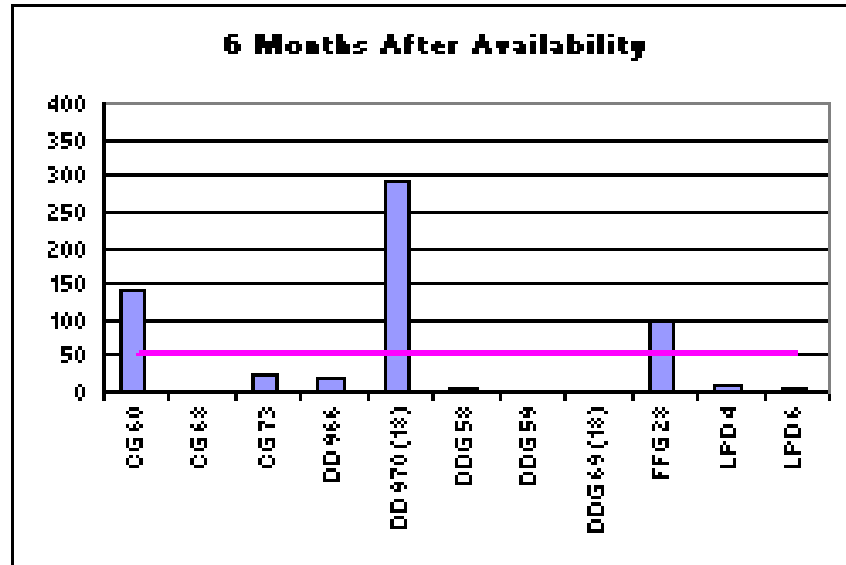# Potential G Source Coded Issues Avoided due to Operational Validation Efforts - Over Time

- **18 month average: potential 18 'G' source coded issues avoided**

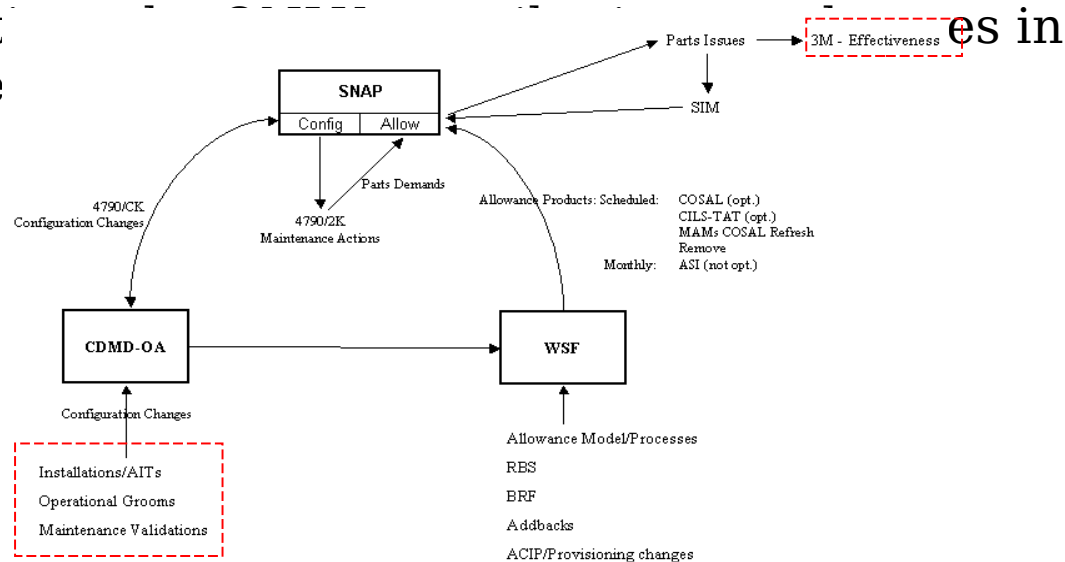# Potential G Source Coded Issues Avoided due to Maintenance Validation Efforts - Over Time

- **18 month average: potential 53 'G' source coded issues avoided**

Preliminary Conclusions:

What do the metrics tell us?

- Validations <u>DO</u> have some potential impact on effectiveness
  - Are validat CMM es in effectivene
    - No . . .

  - Is the impact statistically significant?
    - No – measurements were "worst case scenario".
  - Is the amount of time and effort spend validating worth the small ROI?